

ZHEN ZHU

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Personal website **Google Scholar** **LinkedIn** **Github**

Hi there, this is Zhen Zhu, a third-year CS Ph.D student in University of Illinois at Urbana-Champaign (UIUC), supervised by *Prof. Derek Hoiem*. Prior to that, I obtained my master's degree from HUST in June 2020, under the supervision of *Prof. Xiang Bai*.

My ultimate research goal is centered on building intelligent systems to continually perceive, recognize, understand and predict. My current research surrounds multimodal learning, continual learning and general purpose vision systems. Besides, I have strong interests in image generation, especially in a more general and dynamic fashion. I'm also intrigued in the emerging properties of large models and hope to be a part to develop vision-side world models. I also have sufficient backgrounds in fundamental vision tasks such as object detection and semantic segmentation.

EDUCATION

University of Illinois at Urbana-Champaign, United States *Jan. 2021 - Expected: Dec. 2025*
Ph.D. student in Computer Science, Advisor: Derek Hoiem
Illinois, IL

Huazhong University of Science and Technology, China *Sep. 2017 - June 2020*
Master in Computer Vision and Deep Learning
School of Electronic Information and Communications

Huazhong University of Science and Technology, China *Sep. 2013 - June 2017*
Bachelor of Engineering
School of Computer Science and Technology

PUBLICATIONS

Anytime Continual Learning Under review 2023 (Link to be out soon)
Zhen Zhu, *Nick Gong, Derek Hoiem*

Continual Learning in Open-vocabulary Classification with Complementary Memory Systems Under review 2023
Zhen Zhu, *Weijie Lyu, Yao Xiao, Derek Hoiem*

SingleInsert: Inserting New Concepts from a Single Image into Text-to-Image Models for Flexible Editing Under review 2023
Zijie Wu, Chaohui Yu, Zhen Zhu, Fan Wang, Xiang Bai

Consistent Multimodal Generation via A Unified GAN Framework WACV 2024
Zhen Zhu, *Yijun Li, Weijie Lyu, Krishna Kumar Singh, Zhixin Shu, Soeren Pirk, Derek Hoiem*

CCPL: Contrastive Coherence Preserving Loss for Versatile Style Transfer ECCV 2022 (Oral)
*Zijie Wu, Zhen Zhu**, *Junping Du, Xiang Bai* **Joint first author*

MobileFaceSwap: A Lightweight Framework for Video Face Swapping AAAI 2022
Zhiliang Xu, Zhibin Hong, Changxing Ding, Zhen Zhu, Junyu Han, Jingtuo Liu, Errui Ding

Progressive and Aligned Pose Attention Transfer for Person Image Generation TPAMI 2021
Zhen Zhu, *Tengteng Huang, Mengde Xu, Baoguang Shi, Wenqing Cheng, Xiang Bai*

- FaceController: Controllable Attribute Editing for Face in the Wild** AAAI 2021
Zhiliang Xu, Xiyu Yu, Zhibin Hong, Zhen Zhu, Junyu Han, Jingtuo Liu, Errui Ding, Xiang Bai
- WDNet: Watermark-Decomposition Network for Visible Watermark Removal** WACV 2021
Yang Liu, Zhen Zhu, Xiang Bai
- Semantic Flow for Fast and Accurate Scene Parsing** ECCV 2020 (Oral)
Xiangtai Li, Ansheng You, Zhen Zhu, Houlong Zhao, Maoke Yang, Kuiyuan Yang, Yunhai Tong
- Semantically Mutil-modal Image Synthesis** CVPR 2020
Zhen Zhu, Zhiliang Xu, Ansheng You, Xiang Bai
- Asymmetric Non-local Neural Networks for Semantic Segmentation** ICCV 2019
Zhen Zhu, Mengde Xu, Song Bai, Tengting Huang, Xiang Bai
- Progressive Pose Attention Transfer for Person Image Generation** CVPR 2019 (Oral)
Zhen Zhu, Tengting Huang, Baoguang Shi, Miao Yu, Bofei Wang, Xiang Bai
- Non-stationary Texture Synthesis by Adversarial Expansion** SIGGRAPH 2018
Yang Zhou, Zhen Zhu, Xiang Bai, Dani Lischinski, Daniel Cohen-Or, Hui Huang* *Joint first author
- Feature Fusion for Scene Text Detection** DAS 2018
Zhen Zhu, Minghui Liao, Baoguang Shi, Xiang Bai
- DOTA: A Large-scale Dataset for Object Detection in Aerial Images** CVPR 2018
Gui-Song Xia, Xiang Bai, Jian Ding, Zhen Zhu, Serge Belongie, Jiebo Luo, Mihai Datcu, Marcello Pelillo, Liangpei Zhang
- Rotation-sensitive Regression for Oriented Scene Text Detection** CVPR 2018
Minghui Liao, Zhen Zhu, Baoguang Shi, Gui-song Xia, Xiang Bai
- Auto-Encoder Guided GAN for Chinese Calligraphy Synthesis** ICDAR 2017
Pengyuan Lyu, Xiang Bai, Cong Yao, Zhen Zhu, Tengting Huang, Wenyu Liu

INTERNSHIP OR ASSISTANTSHIP

- Adobe Inc.** *May 2023 - August 2023*
 Adobe Research Scientist Intern, mentored by Yijun Li, Krishna Kumar Singh and Zhixin Shu.
Focus: Bridge LLMs and Diffusion models to create a dynamic system to automatically and continually generate data to improve performance of discriminative tasks. A submission is in progress.
- Adobe Inc.** *May 2022 - August 2022*
 Adobe Research Scientist Intern, mentored by Yijun Li, Krishna Kumar Singh and Zhixin Shu.
Focus: Create a unified GAN framework for generating multiple image analysis with RGB images simultaneously and prove the effectiveness of the model in generating dataset for downstream tasks, such as depth and normal estimation. Paper is accepted to WACV 2024.
- ShanghaiTech** *August 2020 - November 2020*
 Research assistant in VRVC led by Prof. Jingyi Yu
Focus: Engaged in human novel view synthesis and hair neural rendering. A paper is accepted to ACM MM.